



# Post-traumatic stress disorder and its associated factors: a cross-sectional study among refugee children and adolescents living in a Ugandan refugee settlement

Herbert E. Ainamani, Anne Wanjiru Mbwayo, Muthoni Mathai, Linnea Karlsson & Godfrey Zari Rukundo

To cite this article: Herbert E. Ainamani, Anne Wanjiru Mbwayo, Muthoni Mathai, Linnea Karlsson & Godfrey Zari Rukundo (2025) Post-traumatic stress disorder and its associated factors: a cross-sectional study among refugee children and adolescents living in a Ugandan refugee settlement, *European Journal of Psychotraumatology*, 16:1, 2494367, DOI: [10.1080/20008066.2025.2494367](https://doi.org/10.1080/20008066.2025.2494367)

To link to this article: <https://doi.org/10.1080/20008066.2025.2494367>



© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 21 May 2025.



Submit your article to this journal [↗](#)



Article views: 546



View related articles [↗](#)



View Crossmark data [↗](#)



## Post-traumatic stress disorder and its associated factors: a cross-sectional study among refugee children and adolescents living in a Ugandan refugee settlement

Herbert E. Ainamani <sup>a,b</sup>, Anne Wanjiru Mbwayo <sup>a</sup>, Muthoni Mathai <sup>a</sup>, Linnea Karlsson <sup>c,d,e</sup> and Godfrey Zari Rukundo <sup>f,\*</sup>

<sup>a</sup>Department of Psychiatry, University of Nairobi, Nairobi, Kenya; <sup>b</sup>Department of Mental Health, Kabale University School of Medicine, Kabale, Uganda; <sup>c</sup>Department of Child Psychiatr, Turku University and Hospital, Turku, Finland; <sup>d</sup>Centre for Population Health Research, University of Turku, Turku, Finland; <sup>e</sup>Department of Public Health, Turku University Hospital, Turku, Finland; <sup>f</sup>Department of Psychiatry, Mbarara University of Science and Technology, Mbarara, Uganda

### ABSTRACT

**Objective:** The prevalence of post-traumatic stress disorder (PTSD) and its risk factors among adult refugees in the context of war-related forced migration is well established. However, reliable data are lacking on war-related trauma among refugee children and adolescents residing in refugee settlements. This study estimated the magnitude of PTSD and its associated factors among children and adolescents in Nakivale refugee settlement, south-western Uganda.

**Method:** We conducted a cross-sectional quantitative study among 325 adolescent (10–19-year-old) refugees, who were selected using a simple random sampling approach. The presence of PTSD was assessed by the Mini-International Neuropsychiatric Interview for Children and Adolescents. The main predictor variables were assessed by structured checklists for war trauma and post-migration using Kobol collect software. Data were exported to Stata 23 for analysis. The prevalence of PTSD was computed using descriptive statistics. Bivariate and multivariate logistic regression analyses were used to determine factors associated with PTSD.

**Results:** The prevalence of PTSD in our study was 83% (269/325, 95% CI 0.782–0.867). Factors associated with PTSD included post-migration difficulties (OR = 4.11, 95% CI 2.52–8.43,  $p < .001$ ) and exposure to war-related trauma (OR = 2.23, 95% CI 1.16–4.261,  $p = .016$ ).

**Conclusion:** The high prevalence of PTSD in our sample of refugee children and adolescents is associated with both war trauma and post-migration difficulties. This information is important for the psychological assessment and treatment of the children and adolescents living in the refugee settlement. Identification of potentially modifiable factors in post-migration conditions and acknowledgement of the effects of conflicts on health are of high priority from both societal and global perspectives.

### Trastorno por estrés postraumático y sus factores asociados: estudio transversal en refugiados niños y adolescentes residentes en un asentamiento de refugio en Uganda

**Objetivo:** La prevalencia del trastorno por estrés postraumático (TEPT) y sus factores de riesgo entre los refugiados adultos en el contexto de la migración forzada relacionada con la guerra está bien establecida. Sin embargo, se carece de datos fiables sobre el trauma relacionado con la guerra en refugiados niños y adolescentes residentes en un asentamiento de refugio. Este estudio estimó la magnitud del TEPT y sus factores asociados entre los adolescentes del asentamiento de refugio de Nakivale, en el suroeste de Uganda.

**Método:** Realizamos un estudio cuantitativo transversal con 325 adolescentes (10–19) refugiados seleccionados mediante un muestreo aleatorio simple. La presencia de TEPT se evaluó mediante la entrevista neuropsiquiátrica internacional MINI para niños y adolescentes. Las principales variables predictoras se evaluaron mediante listas de verificación estructuradas sobre trauma de guerra y postmigración utilizando el software Kobol Collect. Los datos se exportaron a Stata 23 para su análisis. La prevalencia del TEPT se calculó mediante estadística descriptiva, mientras que se emplearon análisis de regresión logística bivariada y multivariada para determinar los factores asociados con TEPT.

**Resultados:** La prevalencia del TEPT en nuestro estudio fue del 83% (269/325, IC = 0.782–0.867). Los factores asociados con el TEPT incluyeron dificultades posmigratorias (OR = 4.11; IC del 95%: 2.52–8.43,  $p < .001$ ) y exposición a trauma relacionados con la guerra (OR = 2.23; IC del 95%: 1.16–4.261,  $p = .016$ ).

### ARTICLE HISTORY

Received 4 July 2024  
Revised 8 April 2025  
Accepted 9 April 2025

### KEYWORDS

Adolescents; children; PTSD; refugees; post-migration difficulties; East Africa; war; trauma; Uganda

### PALABRAS CLAVE

Adolescentes; niños; TEPT; refugiados; dificultades posmigratorias; África Oriental; guerra; trauma; Uganda

### HIGHLIGHTS

- The prevalence of PTSD is high among children and adolescents in a refugee settlement.
- War trauma and post-migration difficulties are associated with PTSD diagnosis.
- Reduction of post-migration challenges could reduce mental health suffering in this vulnerable group.

**CONTACT** Herbert E. Ainamani [hainamani@kab.ac.ug](mailto:hainamani@kab.ac.ug) Department of Mental Health, Kabale University School of Medicine, Kabale, Uganda  
\*Present address: Department of Psychiatry and Behavioural Neurosciences, McMaster University, Hamilton, ON, Canada

© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

**Conclusión:** La alta prevalencia del TEPT en nuestra muestra de niños y adolescentes refugiados se asocia tanto con trauma de guerra como dificultades posmigratorias. Esta información es importante para la evaluación y tratamiento psicológico de niños y adolescentes que viven en un asentamiento de refugio. La identificación de factores potencialmente modificables en las condiciones posmigratorias y el reconocimiento de los efectos de los conflictos sobre la salud son prioritarios desde una perspectiva social y global.

## 1. Background

Post-traumatic stress disorder (PTSD) is one of the major psychiatric disorders diagnosed among traumatised communities (Ainamani et al., 2020; Aziz et al., 2011; Bahati et al., 2022; Bapolisi et al., 2020; Olema et al., 2014). The 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) has set criterion A for diagnosing PTSD as an exposure to traumatic events involving confrontation with death, serious injury, or sexual violence. The symptoms of PTSD focus on re-experiencing the traumatic experience (intrusion), avoidance, hyperarousal, persistent negative cognitive and emotional changes, such as shame, guilt, and disgust, a sense of continuing danger, increased risk appraisal, and decreased tolerance for danger. A duration of the symptoms of more than 1 month is a requirement (American Psychiatric Association, 2013). Studies have shown that PTSD occurs in different settings, across all age groups (Cao et al., 2017; Telman et al., 2015). However, there are variations in clinical features among children and adolescents (Cao et al., 2017; Haj-Yahia et al., 2019). For example, an overlap between diagnostic criteria of PTSD and other childhood internalising disorders has been documented (Cohen & Scheeringa, 2009), while re-enacting the traumatic event again and again has been seen among children with PTSD (van der Kolk, 1989).

Studies on the prevalence of PTSD among children and adolescents in conflict and post-conflict settings have not reached consensus (Attanayake et al., 2009; Biset et al., 2023, p. 2023; Khamis, 2019; Solberg et al., 2020). For example, a systematic review that was carried out in 2011, assessing 22 studies covering 3003 children and adolescents from more 41 countries, revealed a PTSD prevalence of between 19% and 54% (Bronstein & Montgomery, 2011), whereas an earlier review of 17 studies that were conducted in both conflict and post-conflict settings, with a sample size of 7920 children and adolescents, found the PTSD prevalence to be between 4.5% and 89.3% (Attanayake et al., 2009). Similarly, a systematic review of mental health problems for young people living in refugee camps estimated the prevalence of PTSD to be as high as 87% (Vossoughi et al., 2018). In East Africa, studies assessing the prevalence of PTSD among both refugee children and those from the general population have estimated PTSD prevalence rates

to be between 5% and 60% (Ainamani et al., 2022; Mbwayo et al., 2020; Ssenyonga et al., 2013). For instance, a study among Burundian refugee children in Tanzania observed a 5.7% PTSD prevalence, as per the DSM-5 diagnostic criteria (Scharpf et al., 2019), while a study that examined PTSD prevalence among adolescent refugees in a Uganda refugee settlement revealed a prevalence rate of 49.4% (Ssenyonga et al., 2013). These estimates are closely related to the findings of one study that assessed the prevalence of PTSD among war-affected adolescents in the Ituri region in the eastern Democratic Republic of the Congo (DRC), which found the prevalence of PTSD to be 52.2% (Mels et al., 2009). Taken together, the wide range of PTSD prevalence estimates could reflect differences in the characteristics of study populations, levels of exposure to conflicts, and other adverse life circumstances.

The many risk factors that contribute towards the development of PTSD among refugees include cumulative exposure to war trauma (Im et al., 2022), female gender (Ainamani et al., 2020; Ditlevsen & Elklit, 2012; Lambert et al., 2024), and refugee migration status, such as being an unaccompanied minor (Oberg & Sharma, 2023). Post-migration difficulties, such as having problems with communication, experiences of discrimination, conflicts with other refugee ethnic groups, and worries about the family back home, have also been documented as major contributors to the development of PTSD in post-conflict settings (Aziz et al., 2011; Malm et al., 2020; Mels et al., 2009; Nowak et al., 2023). Studies assessing PTSD and its associated factors among refugee children and adolescents are largely found in high-income countries (Dangmann et al., 2022; Kadir et al., 2019; Oberg & Sharma, 2023). Most of the available studies in Uganda have assessed either adult refugees living in refugee settlements (Bapolisi et al., 2020), or former abducted soldiers enrolled in schools supported by non-governmental organisations (NGOs), or urban adult refugees, who live in a completely different environment from the refugee settlement setting (Bahati et al., 2022; Bahati et al., 2023; Logie et al., 2020). Moreover, studies among urban refugees have assessed other mental health aspects, such as depression and alcohol use disorders. The previous studies that assessed PTSD and its associated factors among children and adolescents in refugee settlements

had small study populations (Onyut et al., 2005; Ssenyonga et al., 2012). Moreover, one of these studies qualitatively documented the narratives of only six children aged 12–17 years in Nakivale refugee settlement (Onyut et al., 2005), while the other examined a sample of 44 children and adolescents in Nakivale refugee settlement as a preliminary study, and found a prevalence of 49.4% (Ssenyonga et al., 2012).

To close this gap in the literature, our study sought to assess the prevalence of PTSD and its associated factors in a large sample of refugee children and adolescents living in Nakivale refugee settlement in south-western Uganda. We aimed to answer the following research questions: (1) what is the prevalence of PTSD among refugee children and adolescents living in Nakivale refugee settlement? (2) What are the factors associated with PTSD among refugee children and adolescents living in Nakivale refugee settlement?

## 2. Method

### 2.1. Study design and setting

We conducted a cross-sectional study between March and May 2024, using quantitative methods of data collection and analysis, among 325 adolescent refugees living in Nakivale refugee resettlement in south-western Uganda. The refugee settlement is one of the oldest refugee settlements in Uganda, and the second largest. It was opened in 1958 and officially established as a settlement in 1960. The refugee settlement is in Isingiro District, about 60 km from Mbarara town (the second largest city in Uganda, after the capital Kampala).

The settlement encompasses 77 villages across three major zones (Rubondo, Juru, and Base camp), which host more than 180,000 refugees from different backgrounds, such as Rwandans, Somalis, Burundians, and Congolese. The large majority of the population in the settlement are women and children. Participants from this study were selected from the Base camp zone. The purposive choice of this zone was based on its diverse composition of refugees from different countries and its central position within the settlement.

### 2.2. Recruitment and sampling procedure

Using a list provided by the chairpersons of different villages within Base camp, participants were selected using a simple random sampling procedure, whereby every third person from number one on the list was included in the study. The primary caregivers of the selected adolescents were approached for recruitment and subsequent parental/guardian consent. A representative sample consisting of 331 children and adolescents from Base camp was initially randomly selected for this study. Out of this sample, only 325 participants were interviewed. Two participants did

not show up at the time of the appointment, while four did not meet our inclusion criteria. Inclusion criteria for participating in this study were: (1) children and adolescents between the ages of 10 and 19 years, who (2) identified as a refugee who had lived in the settlement for less than 5 years, and (3) provided both informed assent and caregiver's consent. Individuals were excluded if they were born in the settlement and had not fled their country of origin because of war-related violence.

Adolescents from the same household were interviewed if they were randomly selected and fulfilled all of the inclusion criteria. One clinical psychologist and a trained counselling psychologist conducted the interviews in a private setting in a hired house close to Base camp (one of the central places with active day-to-day business services) and administrative offices in the settlement.

### 2.3. Ethical considerations

Ethical clearance to conduct this research was obtained from the Kenyatta National Hospital University and the University of Nairobi Ethical Review Committee (KNH-UON REC-P879/12/2023) and Mbarara University of Science and Technology Research Ethics Committee (MUST-REC-MUST-2022-739), and was further registered with Uganda National Council for Science and Technology (UNCST-HS2899ES). The Office of the Prime Minister (OPM) (a governmental department that oversees the work and the welfare of the refugees in Uganda) further cleared this study. Research instruments were translated into Kiswahili and Kinyabwisha (the two languages commonly spoken by the refugees in the settlement), and a blind copy was back-translated before data collection. A written informed consent form was obtained from parents/guardians on behalf of the children, and an assent form was obtained from the children. Both refugee children and caregivers were assured of their confidentiality and the freedom to withdraw from the interview at any time without any negative consequences. Participants experiencing emotional sentiments related to their past unpleasant experiences were supported by the psychologists, and referrals were made to health centres in the area for specialized management. Severe cases of mental health were referred to Medical Team International (MTI) for mental health clinical support.

### 2.4. Measurements

#### 2.4.1. Sociodemographic data

The participants were assessed on their age, educational level, sex, country of origin, and migration status, regarding whether the child was accompanied or unaccompanied.

#### 2.4.2. Exposure to war-related traumatic events

Exposure to war-related traumatic events was assessed using a 15-item checklist adapted from the Violence, War and Abduction Exposure Scale (Catani et al., 2009; Ertl et al., 2011; Neuner et al., 2004). This checklist included questions on whether the participants had experienced or witnessed torture, abduction, physical or sexual assault, rape by armed personnel, seeing dead bodies or mutilations, and being wounded by a weapon. This tool has been used in similar settings on both children and adults, and has shown good psychometric properties and interrater reliability in Uganda (Ainamani et al., 2024; Neuner et al., 2004). Participants were scored as to whether they had experienced the event or not. The sum score of lifetime exposure to war traumatic experiences ranged from 0 to 15, with higher scores indicating exposure to more trauma. This tool possesses good psychometric properties (Scharpf et al., 2019).

#### 2.4.3. Post-migration difficulties

Post-migration difficulties were assessed by the Post-Migration Living Difficulties Checklist (Hecker et al., 2018). This is a 17-item scale that has been successfully used in different post-migration settings (Hecker et al., 2018; Schick et al., 2018). Examples of items in this tool include 'Having problems with communication', 'having experienced discrimination', 'having had conflicts with other refugee ethnic groups', 'experiencing worries about the family back home', 'difficulties with getting work (permission, trouble finding work, bad working condition) or prior education not being recognized'.

This scale examines the extent to which post-migration challenges posed a concern over the past 12 months. Items are rated on a five-point scale from 0 (not a problem) to 4 (very serious problem). The tool has persistently been used as a predictor of psychiatric problems in child asylum seekers and adult refugee samples (Jannesari et al., 2020; Schiess-Jokanovic et al., 2023).

#### 2.4.4. PTSD symptom severity

PTSD symptom severity was assessed using the Mini-International Neuropsychiatric Interview for Children and Adolescents 7.02 (MINI-KID). The MINI is a short, structured diagnostic interview compatible with the DSM-5. It is designed for clinical practice, research in psychiatric primary care settings, and epidemiological surveys (Sheehan et al., 2010). The MINI has demonstrated strong validity and reliability in assessing psychiatric disorders in different populations (Högberg et al., 2019). The assessment tool has also been used in similar settings in East African countries, such as Uganda (Nalugya-Sserunjogi et al., 2016) and Kenya (Khasakhala et al., 2013). The semi-structured interview provides a categorical diagnosis as well as

a measure of the severity of PTSD symptoms defined by DSM-5, with 19 items, 17 of which correspond to the DSM-5 symptoms.

All of the assessments in this study were carried out as face-to-face interviews in a safe and secure environment.

### 2.5. Data analysis

Data were analysed using Stata version 23 for Mac. Descriptive statistics were used to assess the prevalence of PTSD in relation to sociodemographics, while logistic regression models were used to estimate the associations between predictor and outcome variables of PTSD.

## 3. Results

### 3.1. Sample characteristics

The participants in this study comprised a total of 325 child and adolescent refugees, with a mean age of 15.03 years (*SD* 3.25; age range 10–19 years). Females [182 (56%)] constituted a bigger percentage than males [143 (44%)]. The majority of the participants [237 (73%)] had attended primary school, while 46 (13%) had no formal education. Most of the participants [269 (83%)] were child and adolescent refugees from DRC, followed by those from Burundi [33 (10%)] and others [Somalis 11 (3%), Rwandese 2 (1%), and Sudanese 11 (3%)]. More than half of the participants [197 (61%)] reported having experienced more than 10 war-related traumatic events. Overall, 298 (92%) reported having been accompanied by their family members during migration, while 23 (8%) were not accompanied. Details are provided in Table 1.

### 3.2. Prevalence of PTSD among children and adolescents living in Nakivale refugee settlement

The prevalence of PTSD in our study was at 83% [269/325, 95% confidence interval (CI) 0.782–0.867]. Female participants showed a higher prevalence of PTSD [85% (154/182)] than their male counterparts, although this difference was not statistically significant.

### 3.3. Factors associated with PTSD among children and adolescents living in Nakivale refugee settlement

In a multivariate logistic regression analysis that estimated the association between different predictor variables and PTSD, we found that participants who had experienced more than 10 post-migration

**Table 1.** Prevalence of post-traumatic stress disorder (PTSD) among refugee children and adolescents in Nakivale refugee settlement, south-western Uganda ( $n = 325$ ).

Characteristic	Total ( $n = 325$ )		PTSD $n = 269$ (83%)		No PTSD $n = 56$ (17%)		$\chi^2$	$p$
	$N$	%	$n$	%	$n$	%		
Gender								
Male	143	44	115	80	28	20	0.989	.320
Female	182	56	154	85	28	15		
Nationality								
Congolese	269	83	223	83	46	17	7.859	.020*
Burundian	33	10	31	94	2	6		
Others	23	7	15	65	8	35		
Age (years)								
$\leq 15$	187	57	147	79	40	21	5.343	.021*
16–19	138	43	122	88	16	12		
Education								
None	46	14	38	83	8	17	2.046	.360
Primary	237	73	193	81	44	19		
Secondary	42	13	38	90	4	10		
Migration status								
Accompanied	298	92	245	82	53	18	0.773	.379
Unaccompanied	27	8	24	89	3	11		
Post-migration difficulties (score)								
$< 10$	88	27	57	65	31	35	27.404	$< .001^{**}$
$\geq 10$	237	73	212	89	25	11		
War trauma (score)								
$< 10$	128	39	94	73	34	27	12.894	$< .001^{**}$
$\geq 10$		61	175	89	22	11		

Note: \*  $p < .05$ , \*\* $p < .01$ .

difficulties [odds ratio (OR) = 4.11, 95% CI 2.17–7.79,  $p < .001$ ] or war-related traumatic events had a greater odds of having PTSD (OR = 2.23, 95% CI 1.16–4.261,  $p = .016$ ). Being a Burundian refugee was also significantly associated with PTSD (OR = 10.62, 95% CI 1.81–62.39,  $p = .009$ ) (Table 2).

#### 4. Discussion

This study sought to assess the prevalence of PTSD and its associated factors among refugee children and adolescents living in Nakivale refugee settlement in south-western Uganda. Our results revealed a high prevalence [269/325 (83%)] of PTSD among the refugee children and adolescents living in this settlement. The odds of meeting PTSD criteria were higher among participants who had experienced more than 10 post-migration difficulties and war-related traumatic events.

Compared to previous studies that assessed the prevalence of PTSD among refugee children and adolescents, our results fall within the same range of PTSD estimates (17–85%) observed by a review of different studies carried out among refugee minors (Oberg & Sharma, 2023), and are lower than the upper threshold prevalence of PTSD (0–99%) documented by different reviews among both adult and child refugees (Bogic et al., 2015; Steel et al., 2009). The high prevalence of PTSD documented in many previous studies could be supported by differences in the samples assessed, such as a study on people who had been exposed to bomb attacks in Tanzania, which showed a PTSD prevalence of 93% (Messo, 2013).

More similar to our findings are the results from a study among 331 displaced children in Darfur, Sudan, which show a 75% prevalence of PTSD (Morgos et al., 2008). Notably, the prevalence of PTSD in the current study is higher than the estimates documented by Ssenyonga et al. (2012), who found the overall prevalence of PTSD to be 49.4% among a sample of adolescent refugees in Nakivale refugee settlement. The variation between the findings of the current study and those of other studies that found a lower prevalence of PTSD could be based on the differences in the inclusion criteria of children who have experienced war trauma and had stayed in the settlement for only 5 years. It is possible that those studies either studied refugee children who had settled in high-income countries (Lemonjava et al., 2020) or recruited all of the refugees into the study without specifying the time of arrival at the refugee settlement (Ssenyonga et al., 2013). Moreover, it has been documented that time between exposure and initial assessment matters in ascertaining the diagnosis (Richardson et al., 2010). Thus, the high prevalence of PTSD in our study may have been due to the recent exposure to traumatic events in our sample of refugee children and adolescents. Another factor that may explain the variation between our results and findings from previous studies could be differences in sampling strategies and measurements of PTSD according to the DSM-5 diagnostic procedure. It can be argued that, for children and adolescents in our sample, the memories of the traumatic events were still fresh and may have greatly impacted the prevalence of PTSD. In addition, the variation in methods of assessment for a clinical

**Table 2.** Bivariate and multivariate logistic regression analysis of factors associated with post-traumatic stress disorder (PTSD).

Characteristic	PTSD					
	cOR	<i>p</i>	95% CI	aOR	<i>p</i>	95% CI
Gender						
Male	Ref.					
Female	1.34	.321	0.75–2.38			
Nationality						
Others	Ref.			Ref.		
Congolese	2.59	.042	1.04–6.45	2.63	.068	0.93–7.41
Burundian	8.27	.013	1.56–43.81	10.62	.009	1.81–62.39
Age (years)						
≤ 15	Ref.					
16–19	2.07	.023	1.11–3.89	1.83	.078	0.93–3.58
Education						
None	Ref.					
Primary	0.92	.851	0.40–2.12			
Secondary	2.00	.289	0.56–7.21			
Migration status						
Unaccompanied	Ref.					
Accompanied	0.58	.385	0.17–1.99			
Post-migration difficulties (score)						
< 10	Ref.					
≥ 10	4.61	< .001	2.52–8.43	4.11	< .001	2.17–7.79
War trauma (score)						
< 10	Ref.					
≥ 10	2.88	< .001	1.59–5.2	2.23	.016	1.16–4.26

Note: OR = odds ratio; CI = confidence interval; cOR = crude odds ratio; aOR = adjusted odds ratio.

diagnosis of PTSD could have brought about the variations in the prevalence. For the purposes of harmonizing the findings in this area of research, clinically tested standardized tools are recommended for use.

The findings from this study are in line with some aspects of previous studies that have persistently shown a positive correlation between exposure to war trauma and impairments in mental health among refugee populations (Hecker et al., 2016; Patanè et al., 2022). The results from this study further support earlier studies that showed a positive correlation between exposure to traumatic events and PTSD (Ainamani et al., 2020; Neuner et al., 2004).

Although it could be assumed that our findings build on the earlier findings that an association exists between exposure to cumulative trauma and the development of PTSD symptomatology (Ainamani et al., 2020; Neuner et al., 2004), they cannot fully support this assertion since the cut-off points for war trauma and post-migration difficulties in this study were somewhat arbitrary. We argue, however, that our study may be the first one to assess the association between a categorical number of potentially traumatic events and a PTSD diagnosis in a refugee setting. We therefore recommend that future studies look at cumulative exposure to traumatic events and PTSD diagnosis using a finer categorization of traumatic events (Ainamani et al., 2020; Neuner et al., 2004). In general, based on our findings and those from previous studies, it is possible to argue that exposure to multiple traumatic events can potentially increase the risk of developing PTSD in any given population.

Albeit with a wide difference between lower and upper confidence intervals, our finding on the

association between country of origin and PTSD agrees with previous studies that have shown a correlation between place of origin and PTSD (Bapolisi et al., 2020; Kasinger et al., 2023). Our findings along this line could have been influenced by exposure to different levels of traumatization that occur in different countries of origin. We recommend a close examination of differences in forms of exposure to traumatization, including child maltreatment and post-migration difficulties, based on ethnicity and country of origin among adolescents living in refugee settlements.

A key finding from our study is that the odds of developing PTSD were higher among those adolescents who exhibited higher post-migration difficulties than in their counterparts who demonstrated low levels of post-migration difficulties. Our findings resonate with those of a study that examined the association between refugees' mental health and post-migration life challenges in Australia (Steel et al., 2002). Various post-migration difficulties experienced by the children and adolescents in our sample included communication difficulties, fear of being forcefully repatriated, worry about their relatives back home, having difficulties in obtaining appropriate accommodation, experiencing difficulties in learning the local languages, trouble finding work (for adolescents not in school), unrecognized educational levels for career progression, and many others (see supplementary material). These findings agree with previous studies that have shown that refugees experience a number of post-migration living challenges (Schick et al., 2018). We recommend that policy makers and other stakeholders working with refugees develop interventions such as appropriate housing,

training in local languages, accelerated education, and assurance of non-forced migration strategies that are geared towards alleviating post-migration challenges.

Similarly, a study that was conducted in Austria among Iraqi and Syrian asylum seekers showed that participants with high levels of post-traumatic stress symptoms reported higher levels of post-migration difficulties (Demirli Yıldız & Strohmeier, 2024). We argue that refugee adolescents experience various post-migration difficulties that are related to PTSD diagnosis. Based on our findings, we recommend supportive intervention of all kinds to reduce the experiences of post-migration difficulties.

In general, based on the findings of the current study, it can be argued that in the context of forced migration, the aetiology of PTSD cannot only be explained by exposure to war trauma but rather by its combination with post-migration difficulties. Furthermore, one previous follow-up study observed that psychiatric problems in asylum seekers did not decrease 2 years after their arrival in Switzerland (Steel et al., 2011). Future researchers and clinicians working with refugees should be encouraged always to factor in post-migration difficulties during the overall mental health assessment and diagnostic procedure. Interventions such as improving the suitability of accommodation, ensuring access to high-quality healthcare services, providing reliable access to clean water and sanitation, and the reduction of stigma, all aimed at reducing post-migration difficulties among refugee communities, are encouraged (Andrew, 2016; Bahati et al., 2022; Kemigisha et al., 2020; Namubiru et al., 2022). For example, a lack of reliable access to healthcare means that refugees are unable to address their mental health challenges effectively, while poor sanitation can exacerbate feelings of shame and stigma, which have been shown to correlate with poor mental health outcomes (Magruder et al., 2017; Nowak et al., 2023; Sijbrandij et al., 2017). Moreover, interventions that reduce post-migration difficulties have shown significant effectiveness in the reduction of mental health-related problems among refugees and asylum seekers (Schick et al., 2018; Spaaij et al., 2023).

#### 4.1. Limitations

First, our sample was restricted to children and adolescents who had fled their home countries as refugees and were living in Nakivale refugee settlement. Although our randomly selected population can be considered representative of the refugee children and adolescents in Nakivale refugee settlement, it cannot be generalized to all of the young refugees around the globe. Future studies are recommended to adopt prospective approaches to provide more light on the causal relationships.

Secondly, certain biases, such as recall and social desirability, common to retrospective designs could have affected the findings of this study. For example, it is possible that caregivers and participants may not have disclosed details of more stressful events owing to avoidance, one of the core symptoms of PTSD (inability to remember, recall, or speak about the traumatic event) (Shaheen et al., 2020). However, efforts were made to minimize recall biases and social desirability by obtaining collaborative information from the primary caregivers (Moreno-Serra et al., 2022).

## 5. Conclusion

Refugee children and adolescents are prone to developing PTSD, which is associated with their experiences of war-related trauma and post-migration difficulties. Equipping NGOs, social welfare staff, and teachers with the knowledge of PTSD and its risk factors is thus essential for psychological assessment, treatment, and policies aimed towards improving the mental health of the children and adolescents living in the refugee settlements in Uganda. Services that address post-migration challenges, such as suitable accommodation, short training courses in local languages, accelerated education, provision of water, and peace and conflict interventional programmes, are encouraged.

## Acknowledgements

We thank our participants for volunteering their information freely. We also thank Marianne for proofreading our manuscript.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Authors' contributions

HEA participated in the conception and design of the study, collected data, performed the data analyses, interpreted the data, and drafted the manuscript. AWM rigorously participated in the conception of study, supported data collection processes, and provided substantial revision of the manuscript. MM participated in the conception of the study and provided substantial revision of the manuscript. LK participated in writing, review, and editing of the manuscript. GZR supported the data collection processes and revised the manuscript. All authors read and approved the final manuscript.

## Availability of data and material

The data sets used and analysed during the current study will be available on [dataverse.harvard.edu](https://dataverse.harvard.edu) upon the acceptance of the paper for publication.

## ORCID

Herbert E. Ainamani  <http://orcid.org/0000-0001-7290-7232>

Anne Wanjiru Mbwayo  <http://orcid.org/0000-0003-4888-2375>

Muthoni Mathai  <http://orcid.org/0000-0002-1480-5833>

Linnea Karlsson  <http://orcid.org/0000-0002-4725-0176>

## References

- Ainamani, H. E., Elbert, T., Olema, D. K., & Hecker, T. (2020). Gender differences in response to war-related trauma and posttraumatic stress disorder – a study among the Congolese refugees in Uganda. *BMC Psychiatry*, 20(1), 17. <https://doi.org/10.1186/s12888-019-2420-0>
- Ainamani, H. E., Rukundo, G., Gumisiriza, N., Tumwine, C., & Hall, J. (2024). Youth harbour feelings of revenge: Investigating the association between PTSD symptomatology, vengeance, and willingness to forgive among the Congolese adolescent refugees in Uganda. *European Journal of Psychotraumatology*, 15(1), 2406169. <https://doi.org/10.1080/20008066.2024.2406169>
- Ainamani, H. E., Weierstall-Pust, R., Bahati, R., Otwine, A., Tumwesigire, S., & Rukundo, G. Z. (2022). Post-traumatic stress disorder, depression and the associated factors among children and adolescents with a history of maltreatment in Uganda. *European Journal of Psychotraumatology*, 13(1), 2007730. <https://doi.org/10.1080/20008198.2021.2007730>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5™* (5th ed). American Psychiatric Publishing.
- Andrew, A. K. (2016). Health status and quality of health care services of Congolese refugees in nakivale, Uganda. *Journal of Food Research*, 5(3), 39. <https://doi.org/10.5539/jfr.v5n3p39>
- Attanayake, V., Mckay, R., Joffres, M., Singh, S., Burkle, F., & Mills, E. (2009). Prevalence of mental disorders among children exposed to war: A systematic review of 7,920 children. *Medicine, Conflict, and Survival*, 25(1), 4–19. <https://doi.org/10.1080/13623690802568913>
- Aziz, A., Tawahina, A., Sarraj, E., Henely, D., Pelleick, H., & Vostanis, P. (2011). Post-traumatic stress disorder and attention-deficit hyperactivity disorder in Palestinian children affected by the war on gaza. *International Psychiatry*, 8(4), 84–85. <https://doi.org/10.1192/S1749367600002721>
- Bahati, A. H., Ashaba, S., Rukundo, Z. G., & Sigmund, C. (2022). Refugee stigma and Its association with depression symptom severity: Findings from urban refugees living in mbarara city, southwestern Uganda. *Open Journal of Psychiatry*, 12(4), 296–310. <https://doi.org/10.4236/ojpsych.2022.124022>
- Bahati, R., Ashaba, S., Sigmund, C. D., Rukundo, G. Z., & Ainamani, H. E. (2023). Gender differences in substance use and associated factors among urban refugees in Uganda. *European Journal of Psychotraumatology*, 14(2), 2238583. <https://doi.org/10.1080/20008066.2023.2238583>
- Bapolisi, A. M., Song, S. J., Kesande, C., Rukundo, G. Z., & Ashaba, S. (2020). Post-traumatic stress disorder, psychiatric comorbidities and associated factors among refugees in nakivale camp in southwestern Uganda. *BMC Psychiatry*, 20(1), 53. <https://doi.org/10.1186/s12888-020-2480-1>
- Biset, G., Goshiye, D., Melese, N., & Tsehay, M. (2023). Post-traumatic stress disorders among children and adolescents in conflict-affected zones of amhara region, February 2022. *Frontiers in Psychology*, 13, 1052975. <https://doi.org/10.3389/fpsyg.2022.1052975>
- Bogic, M., Njoku, A., & Priebe, S. (2015). Long-term mental health of war-refugees: A systematic literature review. *BMC International Health and Human Rights*, 15(1), 29. <https://doi.org/10.1186/s12914-015-0064-9>
- Bronstein, I., & Montgomery, P. (2011). Psychological distress in refugee children: A systematic review. *Clinical Child and Family Psychology Review*, 14(1), 44–56. <https://doi.org/10.1007/s10567-010-0081-0>
- Cao, X., Wang, L., Cao, C., Zhang, J., & Elhai, J. D. (2017). DSM-5 Posttraumatic stress disorder symptom structure in disaster-exposed adolescents: Stability across gender and relation to behavioral problems. *Journal of Abnormal Child Psychology*, 45(4), 803–814. <https://doi.org/10.1007/s10802-016-0193-1>
- Catani, C., Schauer, E., Elbert, T., Missmahl, I., Bette, J., & Neuner, F. (2009). War trauma, child labor, and family violence: Life adversities and PTSD in a sample of school children in Kabul. *Journal of Traumatic Stress*, 22(3), 163–171. <https://doi.org/10.1002/jts.20415>
- Cohen, J. A., & Scheeringa, M. S. (2009). Post-traumatic stress disorder diagnosis in children: Challenges and promises. *Dialogues in Clinical Neuroscience*, 11(1), 91–99. <https://doi.org/10.31887/DCNS.2009.11.1/jacohen>
- Dangmann, C., Dybdahl, R., & Solberg, Ø. (2022). Mental health in refugee children. *Current Opinion in Psychology*, 48, 101460. <https://doi.org/10.1016/j.copsyc.2022.101460>
- Demirli Yıldız, A., & Strohmeier, D. (2024). The role of post-traumatic stress symptoms and post migration life difficulties for future aspirations of Iraqi and Syrian asylum seekers. *Sage Open*, 14(2), 21582440241244698. <https://doi.org/10.1177/21582440241244698>
- Ditlevsen, D. N., & Elklit, A. (2012). Gender, trauma type, and PTSD prevalence: A re-analysis of 18 nordic convenience samples. *Annals of General Psychiatry*, 11(1), 26. <https://doi.org/10.1186/1744-859X-11-26>
- Ertl, V., Pfeiffer, A., Saile, R., Schauer, E., Elbert, T., & Neuner, F. (2011). Validation of a mental health assessment in an African conflict population. *International Perspectives in Psychology*, 1(Supplement 1), 19–27. <https://doi.org/10.1037/2157-3883.1.S.19>
- Haj-Yahia, M., Hassan-Abbas, N., Malka, M., & Sokar, S. (2019). Exposure to family violence in childhood, self-efficacy, and posttraumatic stress symptoms in young adulthood. *Journal of Interpersonal Violence*, 36, 088626051986008. <https://doi.org/10.1177/0886260519860080>
- Hecker, T., Barnewitz, E., Stenmark, H., & Iversen, V. (2016). Pathological spirit possession as a cultural interpretation of trauma-related symptoms. *Psychological Trauma: Theory, Research, Practice, and Policy*, 8(4), 468–476. <https://doi.org/10.1037/tra0000117>
- Hecker, T., Huber, S., Maier, T., & Maercker, A. (2018). Differential associations among PTSD and complex PTSD symptoms and traumatic experiences and postmigration difficulties in a culturally diverse refugee sample. *Journal of Traumatic Stress*, 31(6), 795–804. <https://doi.org/10.1002/jts.22342>
- Högberg, C., Billstedt, E., Björck, C., Björck, P.-O., Ehlers, S., Gustle, L.-H., Hellner, C., Höök, H., Serlachius, E.,

- Svensson, M. A., & Larsson, J.-O. (2019). Diagnostic validity of the MINI-KID disorder classifications in specialized child and adolescent psychiatric outpatient clinics in Sweden. *BMC Psychiatry*, 19(1), 142. <https://doi.org/10.1186/s12888-019-2121-8>
- Im, H., Swan, L. E., Warsame, A. H., & Isse, M. M. (2022). Risk and protective factors for comorbidity of PTSD, depression, and anxiety among Somali refugees in Kenya. *International Journal of Social Psychiatry*, 68(1), 134–146. <https://doi.org/10.1177/0020764020978685>
- Jannesari, S., Hatch, S., Prina, M., & Oram, S. (2020). Post-migration social–environmental factors associated with mental health problems Among asylum seekers: A systematic review. *Journal of Immigrant and Minority Health*, 22(5), 1055–1064. <https://doi.org/10.1007/s10903-020-01025-2>
- Kadir, A., Battersby, A., Spencer, N., & Hjern, A. (2019). Children on the move in Europe: A narrative review of the evidence on the health risks, health needs and health policy for asylum seeking, refugee and undocumented children. *BMJ Paediatrics Open*, 3(1), bmjpo-2018-000364. <https://doi.org/10.1136/bmjpo-2018-000364>
- Kasinger, C., Schulz, A.-C., Ulke, C., Maercker, A., Beutel, M., & Brähler, E. (2023). Historical and regional particularities in the prevalence of traumatic events and post-traumatic stress disorder in east and west Germany. *BMC Public Health*, 23(1), 1601. <https://doi.org/10.1186/s12889-023-16534-6>
- Kemigisha, E., Rai, M., Mlahagwa, W., Nyakato, V. N., & Ivanova, O. (2020). A qualitative study exploring menstruation experiences and practices among adolescent girls living in the Nakivale refugee settlement, Uganda. *International Journal of Environmental Research and Public Health*, 17(18), 6613. <https://doi.org/10.3390/ijerph17186613>
- Khamis, V. (2019). Posttraumatic stress disorder and emotion dysregulation among Syrian refugee children and adolescents resettled in Lebanon and Jordan. *Child Abuse & Neglect*, 89, 29–39. <https://doi.org/10.1016/j.chiabu.2018.12.013>
- Khasakhala, L. I., Ndeti, D. M., Mathai, M., & Harder, V. (2013). Major depressive disorder in a Kenyan youth sample: Relationship with parenting behavior and parental psychiatric disorders. *Annals of General Psychiatry*, 12(1), 15. <https://doi.org/10.1186/1744-859X-12-15>
- Lambert, J. E., Karugahe, W., & Baguma, P. K. (2024). Unpacking gender-specific risk and protective factors for mental health status among Congolese refugees in Uganda. *European Journal of Psychotraumatology*, 15(1), 2334190. <https://doi.org/10.1080/20008066.2024.2334190>
- Lemonjava, N., Antia, K., Lobjanidze, M., & Lobjanidze, T. (2020). Mental health status of refugee children. *European Journal of Public Health*, 30(Supplement\_5), ckaa166.752. <https://doi.org/10.1093/eurpub/ckaa166.752>
- Logie, C. H., Okumu, M., Mwima, S., Hakiza, R., Chemutai, D., & Kyambadde, P. (2020). Contextual factors associated with depression among urban refugee and displaced youth in Kampala, Uganda: Findings from a cross-sectional study. *Conflict and Health*, 14(1), 45. <https://doi.org/10.1186/s13031-020-00289-7>
- Magruder, K. M., McLaughlin, K. A., & Elmore Borbon, D. L. (2017). Trauma is a public health issue. *European Journal of Psychotraumatology*, 8(1), 1375338. <https://doi.org/10.1080/20008198.2017.1375338>
- Malm, A., Tinghög, P., Narusyte, J., & Saboonchi, F. (2020). The refugee post-migration stress scale (RPMS) – development and validation among refugees from Syria recently resettled in Sweden. *Conflict and Health*, 14(1), 2. <https://doi.org/10.1186/s13031-019-0246-5>
- Mbwayo, A. W., Mathai, M., Harder, V. S., Nicodimos, S., & Vander Stoep, A. (2020). Trauma among Kenyan school children in urban and rural settings: PTSD prevalence and correlates. *Journal of Child & Adolescent Trauma*, 13(1), 63–73. <https://doi.org/10.1007/s40653-019-00256-2>
- Mels, C., Derluyt, I., Broekaert, E., & Rosseel, Y. (2009). Screening for traumatic exposure and posttraumatic stress symptoms in adolescents in the war-affected eastern Democratic Republic of Congo. *Archives of Pediatrics & Adolescent Medicine*, 163(6), 525–530. <https://doi.org/10.1001/archpediatrics.2009.56>
- Messo, I. N. (2013). Prevalence of post-traumatic stress disorder in children: The case of the mbagala bomb blasts in Tanzania. *Journal of Health Psychology*, 18(5), 627–637. <https://doi.org/10.1177/1359105312451188>
- Moreno-Serra, R., Anaya-Montes, M., León-Giraldo, S., & Bernal, O. (2022). Addressing recall bias in (post-)conflict data collection and analysis: Lessons from a large-scale health survey in Colombia. *Conflict and Health*, 16(1), 14. <https://doi.org/10.1186/s13031-022-00446-0>
- Morgos, D., Worden, J. W., & Gupta, L. (2008). Psychosocial effects of war experiences among displaced children in Southern Darfur. *OMEGA - Journal of Death and Dying*, 56(3), 229–253. <https://doi.org/10.2190/OM.56.3.b>
- Nalugya-Sserunjogi, J., Rukundo, G. Z., Ovuga, E., Kiwuwa, S. M., Musisi, S., & Nakimuli-Mpungu, E. (2016). Prevalence and factors associated with depression symptoms among school-going adolescents in Central Uganda. *Child and Adolescent Psychiatry and Mental Health*, 10(1), 39. <https://doi.org/10.1186/s13034-016-0133-4>
- Namubiru, T., Mbabazi, N., Namirembe, T., Lugobe, H. M., & Musiime, V. (2022). Thinness among children aged 5–17 years living in Nakivale refugee settlement, South Western Uganda: A cross-sectional study. *BMC Nutrition*, 8(1), 132. <https://doi.org/10.1186/s40795-022-00632-6>
- Neuner, F., Schauer, M., Karunakara, U., Klaschik, C., Robert, C., & Elbert, T. (2004). Psychological trauma and evidence for enhanced vulnerability for posttraumatic stress disorder through previous trauma among west Nile refugees. *BMC Psychiatry*, 4(1), 34. <https://doi.org/10.1186/1471-244X-4-34>
- Nowak, A. C., Nutsch, N., Brake, T.-M., Gehrlein, L.-M., & Razum, O. (2023). Associations between postmigration living situation and symptoms of common mental disorders in adult refugees in Europe: Updating systematic review from 2015 onwards. *BMC Public Health*, 23(1), 1289. <https://doi.org/10.1186/s12889-023-15931-1>
- Oberg, C., & Sharma, H. (2023). Post-traumatic stress disorder in unaccompanied refugee minors: Prevalence, contributing and protective factors, and effective interventions: A scoping review. *Children*, 10(6), 941. <https://doi.org/10.3390/children10060941>
- Olema, D. K., Catani, C., Ertl, V., Saile, R., & Neuner, F. (2014). The hidden effects of child maltreatment in a war region: Correlates of psychopathology in two generations living in northern Uganda. *Journal of Traumatic Stress*, 27(1), 35–41. <https://doi.org/10.1002/jts.21892>

- Onyut, L. P., Neuner, F., Schauer, E., Ertl, V., Odenwald, M., Schauer, M., & Elbert, T. (2005). Narrative exposure therapy as a treatment for child war survivors with post-traumatic stress disorder: two case reports and a pilot study in an African refugee settlement. *BMC Psychiatry*, 5(1), 7. <https://doi.org/10.1186/1471-244X-5-7>
- Patanè, M., Ghane, S., Karyotaki, E., Cuijpers, P., Schoonmade, L., Tarsitani, L., & Sijbrandij, M. (2022). Prevalence of mental disorders in refugees and asylum seekers: A systematic review and meta-analysis. *Global Mental Health*, 9, 1–14. <https://doi.org/10.1017/gmh.2022.29>
- Richardson, L. K., Frueh, B. C., & Acierno, R. (2010). Prevalence estimates of combat-related post-traumatic stress disorder: critical review. *Australian & New Zealand Journal of Psychiatry*, 44(1), 4–19. <https://doi.org/10.3109/00048670903393597>
- Scharpf, F., Kyaruzi, E., Landolt, M. A., & Hecker, T. (2019). Prevalence and co-existence of morbidity of posttraumatic stress and functional impairment among Burundian refugee children and their parents. *European Journal of Psychotraumatology*, 10(1), 1676005. <https://doi.org/10.1080/20008198.2019.1676005>
- Schick, M., Morina, N., Mistridis, P., Schnyder, U., Bryant, R. A., & Nickerson, A. (2018). Changes in post-migration living difficulties predict treatment outcome in traumatized refugees. *Frontiers in Psychiatry*, 9, 476. <https://doi.org/10.3389/fpsy.2018.00476>
- Schiess-Jokanovic, J., Gösling-Steirer, C., Kantor, V., Knefel, M., Weindl, D., & Lueger-Schuster, B. (2023). My brain freezes and I am blocked again: The subjective experience of post-migration living difficulties influenced by complex posttraumatic stress disorder of Afghan asylum seekers and refugees in Austria. *PLoS One*, 18(7), e0288691. <https://doi.org/10.1371/journal.pone.0288691>
- Shaheen, M., Schindler, L., Saar-Ashkenazy, R., Bani Odeh, K., Soreq, H., Friedman, A., & Kirschbaum, C. (2020). Victims of war – psychoendocrine evidence for the impact of traumatic stress on psychological well-being of adolescents growing up during the Israeli–Palestinian conflict. *Psychophysiology*, 57(1), e13271. <https://doi.org/10.1111/psyp.13271>
- Sheehan, D. V., Sheehan, K. H., Shytle, R. D., Janavs, J., Bannon, Y., Rogers, J. E., Milo, K. M., Stock, S. L., & Wilkinson, B. (2010). Reliability and validity of the MINI International Neuropsychiatric Interview for Children and Adolescents (MINI-KID). *The Journal of Clinical Psychiatry*, 71(3), 313–326. PRIME. [https://www.unboundmedicine.com/medline/citation/20331933/Reliability\\_and\\_validity\\_of\\_the\\_Mini\\_International\\_Neuropsychiatric\\_Interview\\_for\\_Children\\_and\\_Adolescent\\_s\\_\\_MINI\\_KID\\_\\_](https://www.unboundmedicine.com/medline/citation/20331933/Reliability_and_validity_of_the_Mini_International_Neuropsychiatric_Interview_for_Children_and_Adolescent_s__MINI_KID__).
- Sijbrandij, M., Acarturk, C., Bird, M., Bryant, R. A., Burchert, S., Carswell, K., de Jong, J., Dinesen, C., Dawson, K. S., El Chammay, R., van Ittersum, L., Jordans, M., Knaevelsrud, C., McDaid, D., Miller, K., Morina, N., Park, A.-L., Roberts, B., van Son, Y., ... Cuijpers, P. (2017). Strengthening mental health care systems for Syrian refugees in Europe and the Middle East: Integrating scalable psychological interventions in eight countries. *European Journal of Psychotraumatology*, 8(sup2), 1388102. <https://doi.org/10.1080/20008198.2017.1388102>
- Solberg, Ø, Nissen, A., Vaez, M., Cauley, P., Eriksson, A.-K., & Saboonchi, F. (2020). Children at risk: A nation-wide, cross-sectional study examining post-traumatic stress symptoms in refugee minors from Syria, Iraq and Afghanistan resettled in Sweden between 2014 and 2018. *Conflict and Health*, 14(1), 67. <https://doi.org/10.1186/s13031-020-00311-y>
- Spaaij, J., De Graaff, A. M., Akhtar, A., Kiselev, N., McDaid, D., Moergeli, H., Pfaltz, M. C., Schick, M., Schnyder, U., Bryant, R. A., Cuijpers, P., Sijbrandij, M., & Morina, N. (2023). The effect of a low-level psychological intervention (PM+) on post-migration living difficulties – results from two studies in Switzerland and in The Netherlands. *Comprehensive Psychiatry*, 127, 152421. <https://doi.org/10.1016/j.comppsy.2023.152421>
- Ssenyonga, J., Owens, V., & Olema, D. (2013). Posttraumatic growth, resilience, and posttraumatic stress disorder (PTSD) Among refugees. *Procedia - Social and Behavioral Sciences*, 82, 144–148. <https://doi.org/10.1016/j.sbspro.2013.06.238>
- Ssenyonga, J., Owens, V., & Olema, D. K. (2012). Traumatic experiences and PTSD Among adolescent Congolese refugees in Uganda: A preliminary study. *Journal of Psychology in Africa*, 22(4), 629–632. <https://doi.org/10.1080/14330237.2012.10820578>
- Steel, Z., Chey, T., Silove, D., Marnane, C., Bryant, R. A., & van Ommeren, M. (2009). Association of torture and other potentially traumatic events With mental health outcomes Among populations exposed to mass conflict and displacement: A systematic review and meta-analysis. *JAMA*, 302(5), 537–549. <https://doi.org/10.1001/jama.2009.1132>
- Steel, Z., Momartin, S., Silove, D., Coello, M., Aroche, J., & Tay, K. W. (2011). Two year psychosocial and mental health outcomes for refugees subjected to restrictive or supportive immigration policies. *Social Science & Medicine*, 72(7), 1149–1156. <https://doi.org/10.1016/j.socscimed.2011.02.007>
- Steel, Z., Silove, D., Phan, T., & Bauman, A. (2002). Long-term effect of psychological trauma on the mental health of Vietnamese refugees resettled in Australia: A population-based study. *The Lancet*, 360(9339), 1056–1062. [https://doi.org/10.1016/S0140-6736\(02\)11142-1](https://doi.org/10.1016/S0140-6736(02)11142-1)
- Telman, M., Overbeek, M., De Schipper, J. C., Lamers-Winkelmann, F., Finkenauer, C., & Schuengel, C. (2015). Family functioning and children’s post-traumatic stress symptoms in a referred sample exposed to interparental violence. *Journal of Family Violence*, 31, 127–136. <https://doi.org/10.1007/s10896-015-9769-8>
- van der Kolk, B. (1989). The compulsion to repeat the trauma. Re-enactment, revictimization, and masochism. *The Psychiatric Clinics of North America*, 12(2), 389–411. [https://doi.org/10.1016/S0193-953X\(18\)30439-8](https://doi.org/10.1016/S0193-953X(18)30439-8)
- Vossoughi, N., Jackson, Y., Gusler, S., & Stone, K. (2018). Mental health outcomes for youth living in refugee camps: A review. *Trauma, Violence, & Abuse*, 19(5), 528–542. <https://doi.org/10.1177/1524838016673602>